



SEQUENCE LISTING

<110> Georgopoulos, Katia  
Morgan, Bruce

<120> AIOLOS GENE

<130> 10287/031001

<140> US 09/019,348  
<141> 1998-02-05

<150> US 08/733,622  
<151> 1996-10-17

<150> US 60/017,646  
<151> 1996-05-14

<150> US 60/005,527  
<151> 1995-10-18

<160> 29

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 1984

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (374)...(1894)

<400> 1

cacgagcgc	caccgctcg	ctctccttgc	gacacgcct	catcccggt	gtttctcaag	60
tagacgtccc	gagacggctcg	ctgaggca	act gttccacgc	gatcagggtt	cctcaggctt	120
gacattcaaa	agtgggtcg	gaacccgcgg	cactcgagc	gtgcttaaa	gccccgc	180
gccagcgcg	ctctaacc	gcgc	ccccggc	tccgc	cattgcgc	240
gacgcgac	ccg agc	ggc	ccct	tc	gcgcgcgg	300
tccccacggc	gacgac	gg	ccct	cc	gcgcacgt	360
ggccgcgc	gac	gg	cc	gt	cagccgcgc	409
gac	atg	gaa	ata	caa	act	Met
					gtg	Glu
					gag	Asp
					ctg	Ile
					aaa	Gln
					agc	Pro
						Thr
						Val
						Glu
						Lys
						Ser

Met Glu Asp Ile Gln Pro Thr Val Glu Leu Lys Ser

1 5 10

acg	gag	gag	cag	cct	ctg	ccc	aca	gag	agc	cca	gac	gct	ctg	aat	gac	457
Thr	Glu	Glu	Gln	Pro	Leu	Pro	Thr	Glu	Ser	Pro	Asp	Ala	Leu	Asn	Asp	
15	20	25														

15 20 25

tac	agc	ttg	ccc	aaa	cct	cat	gag	ata	gaa	aac	gtg	gac	agt	aga	gaa	505
Tyr	Ser	Leu	Pro	Lys	Pro	His	Glu	Ile	Glu	Asn	Val	Asp	Ser	Arg	Glu	
30	35	35														

30	35	40														
----	----	----	--	--	--	--	--	--	--	--	--	--	--	--	--	--

gcc	cca	gcc	aat	gaa	gac	gaa	gat	gca	gga	gaa	gat	tcg	atg	aaa	gtg	553
Ala	Pro	Ala	Asn	Glu	Asp	Glu	Asp	Ala	Gly	Glu	Asp	Ser	Met	Lys	Val	
45	50	55														

45	50	55	60													
----	----	----	----	--	--	--	--	--	--	--	--	--	--	--	--	--

aaa	gat	gaa	tac	agc	gac	aga	gat	gag	aac	att	atg	aag	ccg	gag	ccc	601
Lys	Asp	Glu	Tyr	Ser	Asp	Arg	Asp	Glu	Asn	Ile	Met	Lys	Pro	Glu	Pro	
65	70	75														

atg gga gat gca gaa gag agt gaa atg Met Gly Asp Ala Glu Glu Ser Glu Met	cct tac agc tat gca aga gaa Pro Tyr Ser Tyr Ala Arg Glu	649	
80	85	90	
tac agc gac tat gaa agc att aag ctg Tyr Ser Asp Tyr Glu Ser Ile Lys Leu	gag aga cac gtg ccc tat gac Glu Arg His Val Pro Tyr Asp	697	
95	100	105	
aac agc aga cca acc agt ggg aag atg Asn Ser Arg Pro Thr Ser Gly Lys Met	aac tgc gac gtg tgc ggg tta Asn Cys Asp Val Cys Gly Leu	745	
110	115	120	
tcc tgc att agc ttc aac gtc ttg atg Ser Cys Ile Ser Phe Asn Val Leu Met	cat aag cga agc cat acc Val His Lys Arg Ser His Thr	793	
125	130	135	140
ggc gaa cgc ccg ttc cag tgt aat cag Gly Glu Arg Pro Phe Gln Cys Asn Gln	tgc ggg gca tct ttt act cag Cys Gly Ala Ser Phe Thr Gln	841	
145	150	155	
aaa ggt aac ctc ctc cgt cat att aaa Lys Gly Asn Leu Leu Arg His Ile	ctg cac acg ggg gaa aaa cct Lys Leu His Thr Gly Glu Lys Pro	889	
160	165	170	
ttt aag tgt cac ctc tgc aac tac gca Phe Lys Cys His Leu Cys Asn Tyr	tgc caa agg aga gat gcg ctc Ala Cys Gln Arg Arg Asp Ala Leu	937	
175	180	185	
acg gga cac ctt agg aca cat tct gtg Thr Gly His Leu Arg Thr His Ser Val	gag aag ccg tac aag tgt gag Glu Lys Pro Tyr Lys Cys Glu	985	
190	195	200	
ttc tgc gga aga agc tac aag cag aga Phe Cys Gly Arg Ser Tyr Lys Gln Arg	agc tcc ctg gag gag cac aag Ser Ser Leu Glu Glu His Lys	1033	
205	210	215	220
gaa cgc tgc cga gct ttt ott cag aac Glu Arg Cys Arg Ala Phe Leu Gln Asn	cct gac ctg ggg gac gct gca Pro Asp Leu Gly Asp Ala Ala	1081	
225	230	235	
agt gtg gag gca aga cac atc aaa gcc Ser Val Glu Ala Arg His Ile Lys Ala	gag atg gga agt gag aga gct Glu Met Gly Ser Glu Arg Ala	1129	
240	245	250	
ctc gtc ctg gac aga tta gca agc aat Leu Val Leu Asp Arg Leu Ala Ser Asn	gtg gct aag cga aaa agc tcg Val Ala Lys Arg Lys Ser Ser	1177	
255	260	265	
atg cct cag aaa ttc atc ggt gag aag Met Pro Gln Lys Phe Ile Gly Glu Lys Arg	cgg cac tgc ttc gat gcc aac His Cys Phe Asp Ala Asn	1225	
270	275	280	
tac aat ccc ggc tac atg tac gag aag Tyr Asn Pro Gly Tyr Met Tyr Glu Lys	gag aac gag atg atg cag acc Glu Asn Glu Met Met Gln Thr	1273	
285	290	295	300
cgg atg atg gac caa gcc atc aat aac Arg Met Met Asp Gln Ala Ile Asn Asn	gcc tat cta ggg gct Ala Ile Ser Tyr Leu Gly Ala	1321	
305	310	315	

gaa gcc ttc cgc ccc tta gtc cag act	ccg cct gct ccc acc tct gag	1369	
Glu Ala Phe Arg Pro Leu Val Gln Thr	Pro Pro Ala Pro Thr Ser Glu		
320	325	330	
atg gtc cca gtc atc agc agt gtg tac	ccc ata gca ctt act cg <sup>g</sup> gcc	1417	
Met Val Pro Val Ile Ser Ser Val Tyr	Pro Ile Ala Leu Thr Arg Ala		
335	340	345	
gat atg cca atg ggg gcc ccg cag gag	atg gaa aag aaa cg <sup>g</sup> atc ctc	1465	
Asp Met Pro Met Gly Ala Pro Gln Glu	Met Glu Lys Lys Arg Ile Leu		
350	355	360	
ctg cca gag aag atc ttg cct tct gaa	cga ggt ctg tcc ccc aat aac	1513	
Leu Pro Glu Lys Ile Leu Pro Ser Glu	Arg Gly Leu Ser Pro Asn Asn		
365	370	375	380
agt gcc cag gac tcc aca gac acc gac	aac cac gag gat cg <sup>c</sup> caa	1561	
Ser Ala Gln Asp Ser Thr Asp Thr Asp	Ser Asn His Glu Asp Arg Gln		
385	390	395	
cat ctc tac cag caa agc cac gtg gtc	ctc ccc cag gcc cg <sup>c</sup> aat ggg	1609	
His Leu Tyr Gln Gln Ser His Val Val	Leu Pro Gln Ala Arg Asn Gly		
400	405	410	
atg cct ctt ctg aag gag gtc cct cg <sup>c</sup> tct ttt gaa	ctc ctc aag ccc	1657	
Met Pro Leu Leu Lys Glu Val Pro Arg Ser Phe Glu	Leu Leu Lys Pro		
415	420	425	
cct ccc atc tgc ctg agg gac tcc atc aaa gtg atc	aac aaa gaa ggg	1705	
Pro Pro Ile Cys Leu Arg Asp Ser Ile Lys Val Ile	Asn Lys Glu Gly		
430	435	440	
gag gtg atg gat gtg ttt cga tgt gac cac tgc cac	gtc ctc ttc cta	1753	
Glu Val Met Asp Val Phe Arg Cys Asp His Cys His	Val Leu Phe Leu		
445	450	455	460
gat tat gtg atg ttc acc atc cac atg ggg tgc cat	ggt ttc cgt gat	1801	
Asp Tyr Val Met Phe Thr Ile His Met Gly Cys His	Gly Phe Arg Asp		
465	470	475	
ccc ttt gag tgt aac atg tgt ggc tat cga agc cac	gat cg <sup>c</sup> tat gag	1849	
Pro Phe Glu Cys Asn Met Cys Gly Tyr Arg Ser His	Asp Arg Tyr Glu		
480	485	490	
tcc tcc tct cac atc gcc aga gga gag cac aga	gcc atg ttg aag	1894	
Phe Ser Ser His Ile Ala Arg Gly Glu His Arg Ala	Met Leu Lys		
495	500	505	
tgagcatctg tcctcaatgc gagggtcaac attgttttt aaagctgatg gtacgcattat			1954
ccagtagact gaactcaaac ccacctcgag			1984

<210> 2  
 <211> 507  
 <212> PRT  
 <213> Mus musculus

<400> 2  
 Met Glu Asp Ile Gln Pro Thr Val Glu Leu Lys Ser Thr Glu Gln  
 1 5 10 15  
 Pro Leu Pro Thr Glu Ser Pro Asp Ala Leu Asn Asp Tyr Ser Leu Pro  
 20 25 30

Lys Pro His Glu Ile Glu Asn Val Asp Ser Arg Glu Ala Pro Ala Asn  
     35                          40                          45  
 Glu Asp Glu Asp Ala Gly Glu Asp Ser Met Lys Val Lys Asp Glu Tyr  
     50                          55                          60  
 Ser Asp Arg Asp Glu Asn Ile Met Lys Pro Glu Pro Met Gly Asp Ala  
     65                          70                          75                          80  
 Glu Glu Ser Glu Met Pro Tyr Ser Tyr Ala Arg Glu Tyr Ser Asp Tyr  
     85                          90                          95  
 Glu Ser Ile Lys Leu Glu Arg His Val Pro Tyr Asp Asn Ser Arg Pro  
     100                         105                         110  
 Thr Ser Gly Lys Met Asn Cys Asp Val Cys Gly Leu Ser Cys Ile Ser  
     115                         120                         125  
 Phe Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
     130                         135                         140  
 Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                         150                         155                          160  
 Leu Arg His Ile Lys Leu His Thr Gly Glu Lys Pro Phe Lys Cys His  
     165                         170                         175  
 Leu Cys Asn Tyr Ala Cys Gln Arg Arg Asp Ala Leu Thr Gly His Leu  
     180                         185                         190  
 Arg Thr His Ser Val Glu Lys Pro Tyr Lys Cys Glu Phe Cys Gly Arg  
     195                         200                         205  
 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys Arg  
     210                         215                         220  
 Ala Phe Leu Gln Asn Pro Asp Leu Gly Asp Ala Ala Ser Val Glu Ala  
     225                         230                         235                          240  
 Arg His Ile Lys Ala Glu Met Gly Ser Glu Arg Ala Leu Val Leu Asp  
     245                         250                         255  
 Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys  
     260                         265                         270  
 Phe Ile Gly Glu Lys Arg His Cys Phe Asp Ala Asn Tyr Asn Pro Gly  
     275                         280                         285  
 Tyr Met Tyr Glu Lys Glu Asn Glu Met Met Gln Thr Arg Met Met Asp  
     290                         295                         300  
 Gln Ala Ile Asn Asn Ala Ile Ser Tyr Leu Gly Ala Glu Ala Phe Arg  
     305                         310                         315                          320  
 Pro Leu Val Gln Thr Pro Pro Ala Pro Thr Ser Glu Met Val Pro Val  
     325                         330                         335  
 Ile Ser Ser Val Tyr Pro Ile Ala Leu Thr Arg Ala Asp Met Pro Met  
     340                         345                         350  
 Gly Ala Pro Gln Glu Met Glu Lys Lys Arg Ile Leu Leu Pro Glu Lys  
     355                         360                         365  
 Ile Leu Pro Ser Glu Arg Gly Leu Ser Pro Asn Asn Ser Ala Gln Asp  
     370                         375                         380  
 Ser Thr Asp Thr Asp Ser Asn His Glu Asp Arg Gln His Leu Tyr Gln  
     385                         390                         395                          400  
 Gln Ser His Val Val Leu Pro Gln Ala Arg Asn Gly Met Pro Leu Leu  
     405                         410                         415  
 Lys Glu Val Pro Arg Ser Phe Glu Leu Leu Lys Pro Pro Pro Ile Cys  
     420                         425                         430  
 Leu Arg Asp Ser Ile Lys Val Ile Asn Lys Glu Gly Glu Val Met Asp  
     435                         440                         445  
 Val Phe Arg Cys Asp His Cys His Val Leu Phe Leu Asp Tyr Val Met  
     450                         455                         460  
 Phe Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys  
     465                         470                         475                          480  
 Asn Met Cys Gly Tyr Arg Ser His Asp Arg Tyr Glu Phe Ser Ser His  
     485                         490                         495  
 Ile Ala Arg Gly Glu His Arg Ala Met Leu Lys  
     500                         505

<210> 3  
 <211> 26  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 3  
 tactaccatc tcacatgggc tgacca 26

<210> 4  
 <211> 26  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 4  
 gaccaggcaca ttttgacact ctgaaa 26

<210> 5  
 <211> 24  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 5  
 gtgtgcgggt tattctgcatt tagc 24

<210> 6  
 <211> 24  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 6  
 atcgaaggcag tgccgcttct cacc 24

<210> 7  
 <211> 628  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> CDS  
 <222> (1)...(627)

<400> 7  
 gaa aga gat gag aat gtt tta aag tca gaa ccc atg gga aat gca gaa 48  
 Glu Arg Asp Glu Asn Val Leu Lys Ser Glu Pro Met Gly Asn Ala Glu  
 1 5 10 15

gag cct gaa atc cct tac agc tat tca aga gaa tat aat gaa tat gaa 96  
 Glu Pro Glu Ile Pro Tyr Ser Tyr Ser Arg Glu Tyr Asn Glu Tyr Glu  
 20 25 30

aac att aag ttg gag aga cat gtt gtc tca ttc gat agt agc agg cca 144  
 Asn Ile Lys Leu Glu Arg His Val Val Ser Phe Asp Ser Ser Arg Pro  
 35 40 45

acc agt gga aag atg aac tgc gat gtg tgt gga tta tcc tgc atc agc 192  
 Thr Ser Gly Lys Met Asn Cys Asp Val Cys Gly Leu Ser Cys Ile Ser  
 50 55 60

ttc aat gtc tta atg gtt cat aag cga agc cat act ggt gaa cgc cca 240  
 Phe Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
 65 70 75 80

ttc cag tgt aat cag tgt ggg gca tct ttt act cag aaa ggt aac ctc Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu	288
85 90 95	
ctc cgc cac att aaa ctg cac aca ggg gaa aaa cct ttt aag tgt cac Leu Arg His Ile Lys Leu His Thr Gly Glu Lys Pro Phe Lys Cys His	336
100 105 110	
ctc tgc aac tat gca tgc caa aga aga gat gcg ctc acg ggg cat ctt Leu Cys Asn Tyr Ala Cys Gln Arg Arg Asp Ala Leu Thr Gly His Leu	384
115 120 125	
agg aca cat tct gtg gag aaa ccc tac aaa tgt gag ttt tgt gga agg Arg Thr His Ser Val Glu Lys Pro Tyr Lys Cys Glu Phe Cys Gly Arg	432
130 135 140	
agt tac aag cag aga agt tcc ctt gag gag cac aag gag cgc tgc cgt Ser Tyr Lys Gln Arg Ser Ser Leu Glu His Lys Glu Arg Cys Arg	480
145 150 155 160	
aca ttt ctt cag agc act gac cca ggg gac act gca agt gcg gag gca Thr Phe Leu Gln Ser Thr Asp Pro Gly Asp Thr Ala Ser Ala Glu Ala	528
165 170 175	
aga cac atc aaa gca gag atg gga agt gaa aga gct ctc gta ctg gac Arg His Ile Lys Ala Glu Met Gly Ser Glu Arg Ala Leu Val Leu Asp	576
180 185 190	
aga tta gca agc aat gtg gca aaa cga aaa agc tca atg cct cag aaa Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys	624
195 200 205	
ttc a Phe	628
 <i>Ari</i> 	
<210> 8	
<211> 209	
<212> PRT	
<213> Homo sapiens	
 <i>&lt;400&gt; 8</i>	
Glu Arg Asp Glu Asn Val Leu Lys Ser Glu Pro Met Gly Asn Ala Glu	
1 5 10 15	
Glu Pro Glu Ile Pro Tyr Ser Tyr Ser Arg Glu Tyr Asn Glu Tyr Glu	
20 25 30	
Asn Ile Lys Leu Glu Arg His Val Val Ser Phe Asp Ser Ser Arg Pro	
35 40 45	
Thr Ser Gly Lys Met Asn Cys Asp Val Cys Gly Leu Ser Cys Ile Ser	
50 55 60	
Phe Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro	
65 70 75 80	
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu	
85 90 95	
Leu Arg His Ile Lys Leu His Thr Gly Glu Lys Pro Phe Lys Cys His	
100 105 110	
Leu Cys Asn Tyr Ala Cys Gln Arg Arg Asp Ala Leu Thr Gly His Leu	
115 120 125	
Arg Thr His Ser Val Glu Lys Pro Tyr Lys Cys Glu Phe Cys Gly Arg	
130 135 140	
Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys Arg	
145 150 155 160	

Thr Phe Leu Gln Ser Thr Asp Pro Gly Asp Thr Ala Ser Ala Glu Ala  
165 170 175  
Arg His Ile Lys Ala Glu Met Gly Ser Glu Arg Ala Leu Val Leu Asp  
180 185 190  
Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys  
195 200 205  
Phe

<210> 9  
<211> 24  
<212> DNA  
<213> Mus musculus

<400> 9  
gtaaacctcctt ccgtcatattt aaac

24

<210> 10  
<211> 24  
<212> DNA  
<213> Mus musculus

<400> 10  
cgagcttttc ttccagaaccc tgac

24

<210> 11  
<211> 24  
<212> DNA  
<213> Mus musculus

<400> 11  
tcagcttttg ggaataccct gtca

24

<210> 12  
<211> 24  
<212> DNA  
<213> Mus musculus

<400> 12  
tcagcttttg ggggttaccct gtca

24

<210> 13  
<211> 30  
<212> DNA  
<213> Mus musculus

<400> 13  
atggtaagg tcggtgtgaa cggatttggc

30

<210> 14  
<211> 30  
<212> DNA  
<213> Mus musculus

<400> 14  
gcacatcgaagg tggaagagtg ggagttgctg

30

<210> 15  
<211> 1788  
<212> DNA  
<213> Mus musculus

<220>  
 <221> CDS  
 <222> (223)...(1515)

<400> 15 aattcgttct accttctctg aaccccaagt gtgtgtcaag gccggactgg gagcttgggg gaagaggaag aggaagagga atctgcgct catccaggaa tcagggtcct tcccaagtgg ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcgat ttggccttgg ggaggcacaa gtctgttgat aacctgaaga ca atg gat gtc gat Met Asp Val Asp 1	60 120 180 234
gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val 5 10 15 20	
agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp 25 30 35	
ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly 40 45 50	
atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg gcc tcc ttt acc Met Gly Glu Arg Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr 55 60 65	
cag aaa ggc aac ctc ctg cgg cac atc aag ctg cac tcg ggt gag aag Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys 70 75 80	
ccc ttc aaa tgc cat ctt tgc aac tat gcc tgc cgc cgg agg gac gcc Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala 85 90 95 100	
ctc acc ggc cac ctg agg acg cac tcc gtt ggt aag cct cac aaa tgt Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys Pro His Lys Cys 105 110 115	
gga tat tgt ggc cgg agc tat aaa cag cga agc tct tta gag gag cat Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His 120 125 130	
aaa gag cga tgc cac aac tac ttg gaa agc atg ggc ctt ccg ggc gtg Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val 135 140 145	
tgc cca gtc att aag gaa gaa act aac cac aac gag atg gca gaa gac Cys Pro Val Ile Lys Glu Thr Asn His Asn Glu Met Ala Glu Asp 150 155 160	
ctg tgc aag ata gga gca gag agg tcc ctt gtc ctg gac agg ctg gca Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala 165 170 175 180	
agc aat gtc gcc aaa cgt aag agc tct atg cct cag aaa ttt ctt gga Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly 185 190 195	

gac aag tgc ctg tca gac atg ccc tat gac agt gcc aac tat gag aag	858
Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys	
200 205 210	
gag gat atg atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc	906
Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala	
215 220 225	
atc aac tac ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc	954
Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro	
230 235 240	
ccc ggt agc tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg	1002
Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu	
245 250 255 260	
cac aag ccc ccc tca gat ggc ccc cca cggt tcc aac cat tca gca cag	1050
His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln	
265 270 275	
gac gcc gtg gat aac ttg ctg ctg tcc aag gcc aag tct gtg tca	1098
Asp Ala Val Asp Asn Leu Leu Leu Ser Lys Ala Lys Ser Val Ser	
280 285 290	
tcg gag cga gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat	1146
Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp	
295 300 305	
aca gag agc aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc	1194
Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr	
310 315 320	
aac cac atc aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag	1242
Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu	
325 330 335 340	
cag cgc gcc tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat	1290
Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp	
345 350 355	
gcc ttc cgt gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag	1338
Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys	
360 365 370	
tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att	1386
Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile	
375 380 385	
cac atg ggc tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt	1434
His Met Gly Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys	
390 395 400	
aac atg tgt ggt tat cac agc cag gac agg tac gag ttc tca tcc cat	1482
Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His	
405 410 415 420	
atc acg cgg ggg gag cat cgt tac cac ctg agc taaaaccac caggccccac	1535
Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser	
425 430	
tgaaggcacaa agatagctgg ttatgcctcc ttccggcag ctggaccac agcggacaat	1595
gtggggagtgg atttgcaggc agcatttgtt ctttatgtt gggttgg cgtttcattt	1655

gcgttggaaat aatgttagtgc acaggattgc attgcatcag caacattcac 1715  
 aacatccatc cttcttagcca gttttgtca ctggtagctg aggtttcccg gatatgtggc 1775  
 ttcctaacac tct 1788

<210> 16  
 <211> 1386  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)...(1383)

<400> 16

aat gtt aaa gta gag act cag agt gat gaa gag aat ggg cgt gcc tgt Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys 1 5 10 15	48
gaa atg aat ggg gaa gaa tgt gcg gag gat tta cga atg ctt gat gcc Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala 20 25 30	96
tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc agc tcg gct Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala 35 40 45	144
ttg tcg gga gtt gga ggc att cga ctt cct aac gga aaa cta aag tgt Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys 50 55 60	192
gat atc tgt ggg atc att tgc atc ggg ccc aat gtg ctc atg gtt cac Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His 65 70 75 80	240
aaa aga agc cac act gga gaa cgg ccc ttc cag tgc aat cag tgc ggg Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly 85 90 95	288
gcc tca ttc acc cag aag ggc aac ctg ctc cgg cac atc aag ctg cat Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 100 105 110	336
tcc ggg gag aag ccc ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 115 120 125	384
cgg agg gac gcc ctc act ggc cac ctg agg acg cac tcc gtt ggt aaa Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys 130 135 140	432
cct cac aaa tgt gga tat tgt ggc cga agc tat aaa cag cga acg tct Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser 145 150 155 160	480
tta gag gaa cat aaa gag cgc tgc cac aac tac ttg gaa agc atg ggc Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 165 170 175	528
ctt ccg ggc aca ctg tac cca gtc att aaa gaa gaa act aag cac agt Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser 180 185 190	576

gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc gtg 624  
 Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val  
 195 200 205

ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg cct 672  
 Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro  
 210 215 220

cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac agt 720  
 Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser  
 225 230 235 240

gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg gac 768  
 Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp  
 245 250 255

caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg cgc 816  
 Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg  
 260 265 270

ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc atc 864  
 Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile  
 275 280 285

agc ccg atg tac cag ctg cac agg cgc tcg gag ggc acc ccg cgc tcc 912  
 Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser  
 290 295 300

aac cac tcg gcc cag gac agc gcc gtg gag tac ctg ctg ctg ctc tcc 960  
 Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Ser  
 305 310 315 320

aag gcc aag ttg gtg ccc tcg gag cgc gag gcg tcc ccg agc aac agc 1008  
 Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser  
 325 330 335

tgc caa gac tcc acg gac acc gag agc aac aac gag gag cag cgc agc 1056  
 Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser  
 340 345 350

ggt ctt atc tac ctg acc aac cac atc gcc cga cgc gcg caa cgc gtg 1104  
 Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val  
 355 360 365

tcg ctc aag gag gag cac cgc gcc tac gac ctg ctg cgc gcc gcc tcc 1152  
 Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser  
 370 375 380

gag aac tcg cag gac gcg ctc cgc gtg gtc agc acc agc ggg gag cag 1200  
 Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln  
 385 390 395 400

atg aag gtg tac aag tgc gaa cac tgc cgg gtg ctc ttc ctg gat cac 1248  
 Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His  
 405 410 415

gtc atg tac acc atc cac atg ggc tgc cac ggc ttc cgt gat cct ttt 1296  
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe  
 420 425 430

gag tgc aac atg tgc ggc tac cac agc cag gac cg<sub>g</sub> tac gag ttc tcg 1344  
 Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser  
 435 440 445

tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc taa 1386  
 Ser His Ile Thr Arg Gly Glu His Arg Phe His M t Ser  
 450 455 460

<210> 17  
 <211> 1296  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)...(1296)

<400> 17

atg	gat	gtc	gat	gag	ggt	caa	gac	atg	tcc	caa	gtt	tca	gga	aag	gag		48
Met	Asp	Val	Asp	Glu	Gly	Gln	Asp	Met	Ser	Gln	Val	Ser	Gly	Lys	Glu		
1			5					10						15			

agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct 96  
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
 20 25 30

gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag 144  
 Val Pro Glu Asp Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys  
 35 40 45

agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat 192  
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp  
 50 55 60

gaa gag aat ggg cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag 240  
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu  
 65 70 75 80

gat tta cga atg ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac 288  
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His  
 85 90 95

agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt 336  
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu  
 100 105 110

cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg 384  
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly  
 115 120 125

ccc aat gtg ctc atg gtt cac aaa aga agt cat act ggt gaa cgg cct 432  
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
 130 135 140

ttc cag tgc aac cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc 480  
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
 145 150 155 160

ctg cgg cac atc aag ctg cac tcg ggt gag aag ccc ttc aaa tgc cat 528  
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His  
 165 170 175

ctt tgc aac tat gcc tgc cgc cgg agg gac gcc ctc acc ggc cac ctg	576
Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu	
180 185 190	
agg acg cac tcc gga gac aag tgc ctg tca gac atg ccc tat gac agt	624
Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser	
195 200 205	
gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg gac cag	672
Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln	
210 215 220	
gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg cgc cca	720
Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro	
225 230 235 240	
ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc atc agc	768
Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser	
245 250 255	
tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca cggt tcc	816
Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser	
260 265 270	
aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg tcc aag	864
Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys	
275 280 285	
gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac agc tgc	912
Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys	
290 295 300	
caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc agc ggc	960
Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly	
305 310 315 320	
ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat ggg ctg	1008
Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu	
325 330 335	
gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg gcc tca	1056
Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser	
340 345 350	
gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc gag cag	1104
Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln	
355 360 365	
ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac	1152
Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His	
370 375 380	
gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc ttt cgg	1200
Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg	
385 390 395 400	
gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac agg tac	1248
Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr	
405 410 415	

gag ttc tca tcc cat atc acg cg<sub>g</sub> gag cat cgt tac cac ctg agc 1296  
 Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
 420 425 430

<210> 18  
 <211> 2049  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (223)...(1776)

<400> 18

aattcgttct accttctctg aacccagtg gtgtgtcaag gccggactgg gagcttgggg 60  
 gaagaggaaag agaaagagga atctgcggct catccagggta tcagggtcct tcccaagtgg  
 ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcg 120  
 ttggccttgg ggaggcacaa gtctgttcat aacctgaaga ca atg gat gtc gat 180  
 Met Asp Val Asp  
 1  
 234

gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc 282  
 Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val  
 5 10 15 20

agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac 330  
 Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp  
 25 30 35

ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc 378  
 Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly  
 40 45 50

atg gcc agt aat gtt aaa gta gag act cag agt gat gaa gag aat ggg 426  
 Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly  
 55 60 65

cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag gat tta cga atg 474  
 Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met  
 70 75 80

ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc 522  
 Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly  
 85 90 95 100

agc tcg gct ttg tca gga gtt gga ggc att cga ctt cct aac gga aaa 570  
 Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys  
 105 110 115

cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg ccc aat gtg ctc 618  
 Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly Pro Asn Val Leu  
 120 125 130

atg gtt cac aaa aga agt cat act ggt gaa cgg cct ttc cag tgc aac 666  
 Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn  
 135 140 145

cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc ctg cgg cac atc 714  
 Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile  
 150 155 160

aag ctg cac tcg ggt gag aag ccc ttc aaa tgc cat ctt tgc aac tat		762
Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr		
165 170 175 180		
gcc tgc cgc cgg agg gac gcc ctc acc ggc cac ctg agg acg cac tcc		810
Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser		
185 190 195		
gtt ggt aag cct cac aaa tgt gga tat tgt ggc cgg agc tat aaa cag		858
Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln		
200 205 210		
cga agc tct tta gag gag cat aaa gag cga tgc cac aac tac ttg gaa		906
Arg Ser Ser Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu		
215 220 225		
agc atg ggc ctt ccg ggc gtg tgc cca gtc att aag gaa gaa act aac		954
Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn		
230 235 240		
cac aac gag atg gca gaa gac ctg tgc aag ata gga gca gag agg tcc		1002
His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser		
245 250 255 260		
ctt gtc ctg gac agg ctg gca agc aat gtc gcc aaa cgt aag agc tct		1050
Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser		
265 270 275		
atg cct cag aaa ttt ctt gga gac aag tgc ctg tca gac atg ccc tat		1098
Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr		
280 285 290		
gac agt gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg		1146
Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met		
295 300 305		
gac cag gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg		1194
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu		
310 315 320		
cgc cca ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc		1242
Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val		
325 330 335 340		
atc agc tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca		1290
Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro		
345 350 355		
cgg tcc aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg ctg		1338
Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu		
360 365 370		
tcc aag gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac		1386
Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn		
375 380 385		
agc tgc caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc		1434
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg		
390 395 400		

agc ggc ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn 405 410 415 420	1482
ggg ctg gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala 425 430 435	1530
gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly 440 445 450	1578
gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu 455 460 465	1626
gat cac gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc Asp His Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly 470 475 480	1674
ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp 485 490 495 500	1722
agg tac gag ttc tca tcc cat atc acg cgg ggg gag cat cgt tac cac Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His 505 510 515	1770
ctg agc taaaaccac caggccccac tgaaggcacaa agatagctgg ttatgcctcc Leu Ser	1826
ttccccggcag ctggacccac agcggacaat gtgggagtgg atttgcagggc agcattttgtt cttttatgtt gggttgtttgg cgtttcattt gcgttggaaag ataagtttt aatgttagtg acaggattgc attgcatcag caacatttcac aacatccatc cttctagcca gttttgttca ctggtagctg aggtttcccg gatatgtggc ttccctaacac tct	1886 1946 2006 2049
<210> 19	
<211> 1170	
<212> DNA	
<213> Mus musculus	
<220>	
<221> CDS	
<222> (1)...(1170)	
<400> 19	
atg gat gtc gat gag ggt caa gac atg tcc caa gtt tca gga aag gag Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu 1 5 10 15	48
agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 20 25 30	96
gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 40 45	144
agt gat cga ggc atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 55 60	192

gcc tcc ttt acc cag aaa ggc	aac ctc ctg cgg cac atc aag ctg cac	240
Ala Ser Phe Thr Gln Lys Gly	Asn Leu Leu Arg His Ile Lys Leu His	
65 70	75 80	
tcg ggt gag aag ccc ttc aaa	tgc cat ctt tgc aac tat gcc tgc cgc	288
Ser Gly Glu Lys Pro Phe Lys	Cys His Leu Cys Asn Tyr Ala Cys Arg	
85	90 95	
cgg agg gac gcc ctc acc ggc	cac ctg agg acg cac tcc gtc att aag	336
Arg Arg Asp Ala Leu Thr Gly	His Leu Arg Thr His Ser Val Ile Lys	
100	105 110	
gaa gaa act aac cac aac gag	atg gca gaa gac ctg tgc aag ata gga	384
Glu Glu Thr Asn His Asn Glu	Met Ala Glu Asp Leu Cys Lys Ile Gly	
115	120 125	
gca gag agg tcc ctt gtc ctg	gac agg ctg gca agc aat gtc gcc aaa	432
Ala Glu Arg Ser Leu Val	Leu Asp Arg Leu Ala Ser Asn Val Ala Lys	
130	135 140	
cgt aag agc tct atg cct cag	aaa ttt ctt gga gac aag tgc ctg tca	480
Arg Lys Ser Ser Met Pro Gln Lys	Phe Leu Gly Asp Lys Cys Leu Ser	
145	150 155 160	
gac atg ccc tat gac agt gcc aac	tat gag aag gag gat atg atg aca	528
Asp Met Pro Tyr Asp Ser Ala Asn	Tyr Glu Lys Glu Asp Met Met Thr	
165	170 175	
tcc cac gtg atg gac cag gcc atc	aac aat gcc atc aac tac ctg ggg	576
Ser His Val Met Asp Gln Ala Ile	Asn Ala Ile Asn Tyr Leu Gly	
180	185 190	
gct gag tcc ctg cgc cca ttg	gtg cag aca ccc ccc ggt agc tcc gag	624
Ala Glu Ser Leu Arg Pro Leu Val	Gln Thr Pro Pro Gly Ser Ser Glu	
195	200 205	
gtg gtg cca gtc atc agc tcc atg	tac cag ctg cac aag ccc ccc tca	672
Val Val Pro Val Ile Ser Ser Met	Tyr Gln Leu His Lys Pro Pro Ser	
210	215 220	
gat ggc ccc cca cgg tcc aac cat	tca gca cag gac gcc gtg gat aac	720
Asp Gly Pro Pro Arg Ser Asn His	Ser Ser Asn Ala Val Asp Asn	
225	230 235 240	
ttg ctg ctg tcc aag gcc aag tct	gtg tca tcg gag cga gag gcc	768
Leu Leu Leu Ser Lys Ala Lys Ser	Val Ser Ser Glu Arg Glu Ala	
245	250 255	
tcc ccg agc aac agc tgc caa gac	tcc aca gat aca gag agc aac gcg	816
Ser Pro Ser Asn Ser Cys Gln Asp	Ser Thr Asp Thr Glu Ser Asn Ala	
260	265 270	
gag gaa cag cgc agc ggc ctt atc	tac tac acc aac cac atc aac ccg	864
Glu Glu Gln Arg Ser Gly Leu Ile	Tyr Leu Thr Asn His Ile Asn Pro	
275	280 285	
cat gca cgc aat ggg ctg gct ctc	aag gag cag cgc gcc tac gag	912
His Ala Arg Asn Gly Leu Ala Leu	Lys Glu Glu Gln Arg Ala Tyr Glu	
290	295 300	

gtg ctg agg gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc	960
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val	
305 310 315 320	
agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc	1008
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg	
325 330 335	
gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc tgc cat	1056
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His	
340 345 350	
ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat	1104
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr	
355 360 365	
cac agc cag gac agg tac gag ttc tca tcc cat atc acg cgg ggg gag	1152
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu	
370 375 380	
cat cgt tac cac ctg agc	1170
His Arg Tyr His Leu Ser	
385 390	
 <i>A/</i>	
<210> 20	
<211> 1128	
<212> DNA	
<213> Mus musculus	
 <220>	
<221> CDS	
<222> (1)...(1128)	
 <400> 20	
atg gat gtc gat gag ggt caa gac atg tcc caa gtt tca gga aag gag	48
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu	
1 5 10 15	
 agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct	96
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro	
20 25 30	
 gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag	144
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys	
35 40 45	
 agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat	192
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp	
50 55 60	
 gaa gag aat ggg cgt gcc tgg gaa atg aat ggg gaa gaa tgt gca gag	240
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu	
65 70 75 80	
 gat tta cga atg ctt gat gcc tgg gga gag aaa atg aat ggc tcc cac	288
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His	
85 90 95	

agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt		336	
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu			
100	105	110	
cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg		384	
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly			
115	120	125	
ccc aat gtg ctc atg gtt cac aaa aga agt cat act gga gac aag tgc		432	
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Asp Lys Cys			
130	135	140	
ctg tca gac atg ccc tat gac agt gcc aac tat gag aag gag gat atg		480	
Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met			
145	150	155	160
atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc atc aac tac		528	
Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr			
165	170	175	
ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc ccc ggt agc		576	
Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser			
180	185	190	
tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg cac aag ccc		624	
Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro			
195	200	205	
ccc tca gat ggc ccc cca cgg tcc aac cat tca gca cag gac gcc gtg		672	
Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val			
210	215	220	
gat aac ttg ctg ctg tcc aag gcc aag tct gtg tca tcg gag cga		720	
Asp Asn Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg			
225	230	235	240
gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc		768	
Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser			
245	250	255	
aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc		816	
Asn Ala Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile			
260	265	270	
aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc		864	
Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Gln Arg Ala			
275	280	285	
tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat gcc ttc cgt		912	
Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg			
290	295	300	
gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac		960	
Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His			
305	310	315	320
tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc		1008	
Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly			
325	330	335	

tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt Cys His Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys 340 345 350	1056
ggt tat cac agc cag gag agg tac gag ttc tca tcc cat atc acg cgg Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg 355 360 365	1104
ggg gag cat cgt tac cac ctg agc Gly Glu His Arg Tyr His Leu Ser 370 375	1128
<210> 21	
<211> 1004	
<212> DNA	
<213> Mus musculus	
<220>	
<221> CDS	
<222> (1)...(1002)	
<400> 21	
gga gaa cgg ccc ttc cag tgc aat cag tgc ggg gcc tca ttc acc cag Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln 1 5 10 15	48
aag ggc aac ctg ctc cgg cac atc aag ctg cat tcc ggg gag aag ccc Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro 20 25 30	96
ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc cgg agg gac gcc ctc Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu 35 40 45	144
act ggc cac ctg agg acg cac tcc gtc att aaa gaa gaa act aag cac Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His 50 55 60	192
agt gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu 65 70 75 80	240
gtg ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met 85 90 95	288
cct cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp 100 105 110	336
agt gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met 115 120 125	384
gac caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu 130 135 140	432
cgc ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val 145 150 155 160	480

atc agc ccg atg tac cag ctg cac	agg cgc tcg gag ggc acc ccg cgc	528	
Ile Ser Pro Met Tyr Gln Leu His	Arg Arg Ser Glu Gly Thr Pro Arg		
165	170	175	
tcc aac cac tcg gcc cag gac agc	gcc gtg gag tac ctg ctg ctg ctc	576	
Ser Asn His Ser Ala Gln Asp Ser	Ala Val Glu Tyr Leu Leu Leu		
180	185	190	
tcc aag gcc aag ttg gtg ccc tcg	gag cgc gag gcg tcc ccg agc aac	624	
Ser Lys Ala Lys Leu Val Pro Ser	Glu Arg Glu Ala Ser Pro Ser Asn		
195	200	205	
agc tgc caa gac tcc acg gac acc	gag agc aac aac gag gag cag cgc	672	
Ser Cys Gln Asp Ser Thr Asp Thr	Glu Ser Asn Asn Glu Glu Gln Arg		
210	215	220	
agc ggt ctt atc tac ctg acc aac	cac atc gcc cga cgc gcg caa cgc	720	
Ser Gly Leu Ile Tyr Leu Thr Asn His	Ile Ala Arg Arg Ala Gln Arg		
225	230	235	240
gtg tcg ctc aag gag gag cac cgc	gcc tac gac ctg ctg cgc gcc gcc	768	
Val Ser Leu Lys Glu Glu His Arg	Ala Tyr Asp Leu Leu Arg Ala Ala		
245	250	255	
tcc gag aac tcg cag gac gcg ctc	cgc gtg gtc agc acc agc ggg gag	816	
Ser Glu Asn Ser Gln Asp Ala Leu	Arg Val Val Ser Thr Ser Gly Glu		
260	265	270	
cag atg aag gtg tac aag tgc gaa	cac tgc cgg gtg ctc ttc ctg gat	864	
Gln Met Lys Val Tyr Lys Cys Glu	His Cys Arg Val Leu Phe Leu Asp		
275	280	285	
cac gtc atg tac acc atc cac atg	ggc tgc cac ggc ttc cgt gat cct	912	
His Val Met Tyr Thr Ile His Met	Gly Cys His Gly Phe Arg Asp Pro		
290	295	300	
ttt gag tgc aac atg tgc ggc tac	cac agc cag gac cgg tac gag ttc	960	
Phe Glu Cys Asn Met Cys Gly Tyr	His Ser Gln Asp Arg Tyr Glu Phe		
305	310	315	320
tcg tcg cac ata acg cga ggg gag	qac cgc ttc cac atg agc	1002	
Ser Ser His Ile Thr Arg Gly Glu	His Arg Phe His Met Ser		
325	330		
ta		1004	

<210> 22  
 <211> 470  
 <212> PRT  
 <213> Mus musculus

<220>  
 <221> VARIANT  
 <222> (1)...(470)  
 <223> Xaa = Any Amino Acid

<400> 22  
 Xaa Xaa Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn  
 1 5 10 15

Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg  
 20 25 30  
 Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln  
 35 40 45  
 Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly  
 50 55 60  
 Lys Leu Lys Cys Asp Ile Cys Gly Ile Xaa Cys Ile Gly Pro Asn Val  
 65 70 75 80  
 Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys  
 85 90 95  
 Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His  
 100 105 110  
 Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn  
 115 120 125  
 Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His  
 130 135 140  
 Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys  
 145 150 155 160  
 Gln Arg Xaa Ser Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu  
 165 170 175  
 Glu Ser Met Gly Leu Pro Gly Xaa Xaa Xaa Pro Val Ile Lys Glu Glu  
 180 185 190  
 Thr Xaa His Xaa Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Xaa Glu  
 195 200 205  
 Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys  
 210 215 220  
 Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Xaa Leu Ser Asp Xaa  
 225 230 235 240  
 Pro Tyr Asp Ser Ala Xaa Tyr Glu Lys Glu Xaa Xaa Met Met Xaa Ser  
 245 250 255  
 His Val Met Asp Xaa Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala  
 260 265 270  
 Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Xaa Ser Glu Val  
 275 280 285  
 Val Pro Val Ile Ser Pro Met Tyr Gln Leu His Xaa Xaa Xaa Ser Xaa  
 290 295 300  
 Gly Xaa Pro Arg Ser Asn His Ser Ala Gln Asp Xaa Ala Val Xaa Xaa  
 305 310 315 320  
 Leu Leu Leu Ser Lys Ala Lys Xaa Val Xaa Ser Glu Arg Glu Ala  
 325 330 335  
 Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Xaa  
 340 345 350  
 Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Xaa Xaa  
 355 360 365  
 Xaa Ala Xaa Xaa Xaa Xaa Leu Lys Glu Glu Xaa Arg Ala Tyr Xaa  
 370 375 380  
 Xaa Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Xaa Arg Val Val  
 385 390 395 400  
 Ser Thr Ser Gly Glu Gln Xaa Lys Val Tyr Lys Cys Glu His Cys Arg  
 405 410 415  
 Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Xaa Xaa Xaa  
 420 425 430  
 Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr  
 435 440 445  
 His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu  
 450 455 460  
 His Arg Xaa His Xaa Ser 465 470

<210> 23  
<211> 334

<212> PRT

<213> Mus musculus

<400> 23

Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln  
1 5 10 15  
Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro  
20 25 30  
Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu  
35 40 45  
Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His  
50 55 60  
Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu  
65 70 75 80  
Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met  
85 90 95  
Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp  
100 105 110  
Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met  
115 120 125  
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu  
130 135 140  
Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val  
145 150 155 160  
Ile Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg  
165 170 175  
Ser Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu  
180 185 190  
Ser Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn  
195 200 205  
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg  
210 215 220  
Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg  
225 230 235 240  
Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala  
245 250 255  
Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu  
260 265 270  
Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp  
275 280 285  
His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro  
290 295 300  
Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe  
305 310 315 320  
Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser  
325 330

<210> 24

<211> 431

<212> PRT

<213> Mus musculus

<400> 24

Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
1 5 10 15  
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
20 25 30  
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
35 40 45  
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly  
50 55 60

Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
 65 70 75 80  
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
 85 90 95  
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys  
 100 105 110  
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser  
 115 120 125  
 Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly  
 130 135 140  
 Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu  
 145 150 155 160  
 Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu  
 165 170 175  
 Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln  
 180 185 190  
 Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala  
 195 200 205  
 Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala  
 210 215 220  
 Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu  
 225 230 235 240  
 Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser  
 245 250 255  
 Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn  
 260 265 270  
 His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys Ala  
 275 280 285  
 Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln  
 290 295 300  
 Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu  
 305 310 315 320  
 Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala  
 325 330 335  
 Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu  
 340 345 350  
 Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu  
 355 360 365  
 Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val  
 370 375 380  
 Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg Asp  
 385 390 395 400  
 Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu  
 405 410 415  
 Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
 420 425 430

<210> 25  
 <211> 461  
 <212> PRT  
 <213> Mus musculus

<400> 25  
 Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys  
 1 5 10 15  
 Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala  
 20 25 30  
 Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala  
 35 40 45  
 Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys  
 50 55 60

Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His  
 65 70 75 80  
 Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly  
 85 90 95  
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
 100 105 110  
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
 115 120 125  
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys  
 130 135 140  
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser  
 145 150 155 160  
 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly  
 165 170 175  
 Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser  
 180 185 190  
 Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val  
 195 200 205  
 Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro  
 210 215 220  
 Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser  
 225 230 235 240  
 Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp  
 245 250 255  
 Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg  
 260 265 270  
 Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile  
 275 280 285  
 Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser  
 290 295 300  
 Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Ser  
 305 310 315 320  
 Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser  
 325 330 335  
 Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser  
 340 345 350  
 Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val  
 355 360 365  
 Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser  
 370 375 380  
 Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln  
 385 390 395 400  
 Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His  
 405 410 415  
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe  
 420 425 430  
 Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser  
 435 440 445  
 Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser  
 450 455 460

<210> 26  
 <211> 432  
 <212> PRT  
 <213> Mus musculus

<400> 26  
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
 1 5 10 15  
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
 20 25 30

Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
     35                  40                          45  
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp  
     50                  55                          60  
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu  
     65                  70                          75                          80  
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His  
     85                  90                          95  
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu  
     100                 105                         110  
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly  
     115                 120                         125  
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
     130                 135                         140  
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                 150                         155                         160  
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His  
     165                 170                         175  
 Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu  
     180                 185                         190  
 Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser  
     195                 200                         205  
 Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln  
     210                 215                         220  
 Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro  
     225                 230                         235                         240  
 Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser  
     245                 250                         255  
 Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser  
     260                 265                         270  
 Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys  
     275                 280                         285  
 Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys  
     290                 295                         300  
 Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly  
     305                 310                         315                         320  
 Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu  
     325                 330                         335  
 Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser  
     340                 345                         350  
 Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln  
     355                 360                         365  
 Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His  
     370                 375                         380  
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg  
     385                 390                         395                         400  
 Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr  
     405                 410                         415  
 Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
     420                 425                         430

<210> 27  
 <211> 518  
 <212> PRT  
 <213> Mus musculus

<400> 27  
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
     1                  5                             10                         15  
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
     20                 25                             30

Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
     35                  40                  45  
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp  
     50                  55                  60  
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu  
     65                  70                  75                  80  
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His  
     85                  90                  95  
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu  
     100                 105                 110  
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly  
     115                 120                 125  
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
     130                 135                 140  
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                 150                 155                 160  
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His  
     165                 170                 175  
 Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu  
     180                 185                 190  
 Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg  
     195                 200                 205  
 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His  
     210                 215                 220  
 Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys  
     225                 230                 235                 240  
 Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly  
     245                 250                 255  
 Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys  
     260                 265                 270  
 Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser  
     275                 280                 285  
 Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr  
     290                 295                 300  
 Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly  
     305                 310                 315                 320  
 Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu  
     325                 330                 335  
 Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser  
     340                 345                 350  
 Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn  
     355                 360                 365  
 Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala  
     370                 375                 380  
 Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala  
     385                 390                 395                 400  
 Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro  
     405                 410                 415  
 His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu  
     420                 425                 430  
 Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val  
     435                 440                 445  
 Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg  
     450                 455                 460  
 Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His  
     465                 470                 475                 480  
 Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr  
     485                 490                 495  
 His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu  
     500                 505                 510

His Arg Tyr His Leu Ser  
515

<210> 28

<211> 390

<212> PRT

<213> Mus musculus

<400> 28

Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
1 5 10 15  
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
20 25 30  
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
35 40 45  
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly  
50 55 60  
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
65 70 75 80  
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
85 90 95  
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys  
100 105 110  
Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly  
115 120 125  
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys  
130 135 140  
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser  
145 150 155 160  
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr  
165 170 175  
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly  
180 185 190  
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu  
195 200 205  
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser  
210 215 220  
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn  
225 230 235 240  
Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala  
245 250 255  
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala  
260 265 270  
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro  
275 280 285  
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu  
290 295 300  
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val  
305 310 315 320  
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg  
325 330 335  
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His  
340 345 350  
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr  
355 360 365  
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu  
370 375 380

His Arg Tyr His Leu Ser  
385 390

<210> 29  
<211> 376  
<212> PRT  
<213> Mus musculus

<400> 29

Met Asp Val Asp Glu Gly Gln Asp	Met Ser Gln Val Ser Gly Lys Glu
1 5	10 15
Ser Pro Pro Val Ser Asp Thr Pro	Asp Glu Gly Asp Glu Pro Met Pro
20	25 30
Val Pro Glu Asp Leu Ser Thr Thr	Ser Gly Ala Gln Gln Asn Ser Lys
35	40 45
Ser Asp Arg Gly Met Ala Ser Asn	Val Lys Val Glu Thr Gln Ser Asp
50	55 60
Glu Glu Asn Gly Arg Ala Cys Glu	Met Asn Gly Glu Glu Cys Ala Glu
65	70 75 80
Asp Leu Arg Met Leu Asp Ala Ser	Gly Glu Lys Met Asn Gly Ser His
85	90 95
Arg Asp Gln Gly Ser Ser Ala Leu	Ser Gly Val Gly Gly Ile Arg Leu
100	105 110
Pro Asn Gly Lys Leu Lys Cys Asp	Ile Cys Gly Ile Val Cys Ile Gly
115	120 125
Pro Asn Val Leu Met Val His Lys	Arg Ser His Thr Gly Asp Lys Cys
130	135 140
Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn	Tyr Glu Lys Glu Asp Met
145	150 155 160
Met Thr Ser His Val Met Asp Gln Ala	Ile Asn Asn Ala Ile Asn Tyr
165	170 175
Leu Gly Ala Glu Ser Leu Arg Pro	Leu Val Gln Thr Pro Pro Gly Ser
180	185 190
Ser Glu Val Val Pro Val Ile Ser Ser	Met Tyr Gln Leu His Lys Pro
195	200 205
Pro Ser Asp Gly Pro Pro Arg Ser Asn	His Ser Ala Gln Asp Ala Val
210	215 220
Asp Asn Leu Leu Leu Ser Lys Ala	Lys Ser Val Ser Ser Glu Arg
225	230 235 240
Glu Ala Ser Pro Ser Asn Ser Cys Gln	Asp Ser Thr Asp Thr Glu Ser
245	250 255
Asn Ala Glu Glu Gln Arg Ser Gly	Leu Ile Tyr Leu Thr Asn His Ile
260	265 270
Asn Pro His Ala Arg Asn Gly	Leu Ala Leu Lys Glu Glu Gln Arg Ala
275	280 285
Tyr Glu Val Leu Arg Ala Ala Ser	Glu Asn Ser Gln Asp Ala Phe Arg
290	295 300
Val Val Ser Thr Ser Gly Glu Gln	Leu Lys Val Tyr Lys Cys Glu His
305	310 315 320
Cys Arg Val Leu Phe Leu Asp His	Val Met Tyr Thr Ile His Met Gly
325	330 335
Cys His Gly Cys His Gly Phe Arg	Asp Pro Phe Glu Cys Asn Met Cys
340	345 350
Gly Tyr His Ser Gln Asp Arg Tyr	Glu Phe Ser Ser His Ile Thr Arg
355	360 365
Gly Glu His Arg Tyr His Leu Ser	
370	375